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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/588,770	05/09/2007	Yoshihiro Miyake	062744	4655

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EXAMINER

STEVENS, THOMAS H

ART UNIT	PAPER NUMBER
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2121

NOTIFICATION DATE	DELIVERY MODE
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01/11/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary	Application No. 10/588,770	Applicant(s) MIYAKE, YOSHIHIRO	
	Examiner THOMAS H. STEVENS	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6,7,9,10 and 12-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3,4,7,9,10 and 12 is/are allowed.
- 6) ☒ Claim(s) 13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 9,14 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1,3,4,6,7,9,10,12-21 were examined.
2. Claims 2,5,8,11, were cancelled.

Section I: Non Final Rejection

Claim Interpretation

3. Office personnel are to give claims their "**broadest reasonable interpretation**" in light of the supporting disclosure. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969). See *also *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow") The reason is simply that during patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process. The Office establishes equivalence between figure 1 of the invention and figure 3 of Miyake, respectively: System=Controller; FBS module=Internal Module; NLS module=Oscillator System; Relation value= Observation/action (mutual-entrainment); Controlling Object: Environment.

Claim Objections

4. Claims 9, 14 and 21 are objected to since it unclear what a program readable is. The Office assumes the applicants are indicated software applications. If that's the case, applicants need to create another claim tree since the disclosure is clear said software is linked to computer based software.

5. Claim 20 is objected to because of the lack of clarity of "clearly separated" (line 8).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claim 15-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 15 recites the limitation "the controller" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

9. Claim 15 recites the limitation "the synchronization" in line 7. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 16 recites the limitation "the phase difference" in line 2. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 16 recites the limitation "the vibration" in line 2. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 16 recites the limitation "the natural frequency" in line 3. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 20 recites the limitation "the achieving" in lines 9-10. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Miyake et al., titled, "Mutual Adaptation in Human-Robot Cooperative Walk" , (1997, hereafter Miyake). Miyake discloses a mutual-entrainment-based internal control system (abstract).

16. Claim 13. A nonlinear control method comprising : creating a synchronous state with a controlled object through a nonlinear interaction with the controlled object; acquiring a state variable relating to a dynamic behavior of the controlled object; adjusting (pg. 125, left column, 3rd paragraph, lines 7-10 discusses the process of stabilization via synchronization of the system; figure 9 shows the result of the time/phase adjustment via entrainment) a parameter for varying a relation value (human data values i.e., figures 4-7, discussing the relation with the robotic time/phase values) relating to the synchronization (pg. 125, left column, 3rd paragraph, lines 7-10 discusses the process of stabilization via synchronization of the system) with the controlled object based on a difference between the relation value (human data values

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i.e., figures 4-7, discussing the relation with the robotic time/phase values) relating to the synchronization (pg. 125, left column, 3rd paragraph, lines 7-10 discusses the process of stabilization via synchronization of the system) and a target relation value (target relation value i.e., figures 4-7, discussing the relation with the robotic time/phase values); and creating a new synchronous state with the controlled object using the adjusted parameter(pg. 125, left column, 3rd paragraph, lines 7-10 discusses the process of stabilization via synchronization of the system with the results of the mutual interaction between the robot and the walking of the person, pg. 127, section 3.2, 2nd, paragraph).

Section II: Allowable Subject Matter

Reasons for Allowance

17. Claims 1, 3,4,7,9,10, and 12 are allowed.

18. The following is an examiner's statement of reasons for allowance are considered allowable since when reading the claims in light of the specification, as per MPEP § 2111.01, In re Sneed, 710 F.2d 1544, 1548, 218 USPQ 385 (Fed. Cir. 1983). The prior art of record discloses most of the claimed invention; however, it fails to disclose a first mode (pg. 11, lines 29-32) composed of a nonlinear system for creating a synchronous state with a controlled object through a nonlinear interaction with the

controlled object; and composed of a nonlinear system a second module (pg. 12, lines 3-20) composed of a feedback system for adjusting a parameter to vary a relation value of the first module relating to the synchronization (pg. 12, lines 1-12) with the controlled object based on a difference between the relation value and a target relation value, wherein the controlled object is controlled by convergence of the relation value relating to the synchronization of the first module to the target relation value, and the first module vibrates at different natural frequencies from the controlled object, and the nonlinear interaction has an entrainment effect (claim 1). Therefore, none of the references of record alone or in combination disclose or suggest the combination of limitations specified in the independent claims.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Section III: Response to Arguments

102(b)

19. The Office thanks the applicants for responding to these issues. The rejection to claims 1,3,4,6,7,9,12 and 14 are withdraw; however, the rejection to claim 13 is maintained due to its broadness (i.e., breaking it down, its nothing more than a closed loop control).

Allowable Subject Matter

20. To avoid any misunderstanding, claims 15-20 are likely allowable subject matter. To expedite prosecution, it's strongly suggested applicants amend the antecedent issues in claims 15-20; clarify, by amendment, claim 20's "clearly separated" limitation; create a new claim tree for the software based claims (i.e., based on claims 9,14, and 21; a preamble reading something as "A computer program integrated on a hardware computer system"); and cancel claim 13.

Conclusion

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715.

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Albert Decady (571-272-3819). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

/Thomas H. Stevens/

Examiner, Art Unit 2121

/Albert DeCady/

Supervisory Patent Examiner, Art Unit 2121